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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,406	12/21/2001	Andrei Vyacheslavovich Shchegrov	11809/10	3622

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06/06/2005

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EXAMINER

ORTIZ RODRIGUEZ, CARLOS R

ART UNIT

PAPER NUMBER

2125

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,406

Applicant(s)

SHCHEGROV, ANDREL
VYACHESLAVOVICH

Examiner

Carlos Ortiz-Rodriguez

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2002.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 7-9 and 17-19 is/are allowed.
6) ☒ Claim(s) 1-3, 5, 6, 10-13, 15, 16 and 20 is/are rejected.
7) ☒ Claim(s) 4 and 14 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

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DETAILED ACTION

Allowable subject matter

1. Claims 7-9 and 17-19 are allowed.

Claim Objections

2. Claims 4 and 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-6, 10-13, 15-16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox A G & Li T, "Resonant modes in a maser interferometer", 1979 in view of Jackson U.S. Patent No. 6,144,687.

Regarding claims 1-3, 5-6, 10-13, 15-16 and 20, Fox A G & Li T discloses a method

for modeling performance characteristics of a laser device wherein a resonance cavity of the laser device includes at least two sub-cavities (Paragraph 1), the method comprising: selecting a reference surface in each sub-cavity; selecting a gain model of at least one sub-cavity; selecting a resonance cavity geometry; injecting a small field in at least one sub-cavity (Paragraph 3).

But Fox A G & Li T fails to clearly specify a round trip iteration.

However, Jackson discloses performing an intra-cavity round trip iteration calculation, including inter-cavity field exchange, for each sub-cavity; performing a convergence test to determine whether convergence has been reached; if convergence has not been reached, performing an intra-cavity round trip iteration calculation for each sub-cavity; if convergence has been reached, computing an output beam characteristic (Fig 3 and C4 L18-56).

Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention suggested by Fox A G & Li T and combining it with the invention disclosed by Jackson. The results of this combination would lead to method for modeling and design of coupled cavity laser devices.

One of ordinary skill in the art would have been motivated to do this modification in order to determine characteristics which exist in a laser as suggested by Fox A G & Li T.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to method for modeling and design of coupled cavity laser devices:

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- a. U.S. Pat. No. 4,189,652 to Levinos et al., which discloses beam splitter coupled CDSE optical parametric oscillator.
- b. U.S. Pat. No. 5,684,820 to Jenkins et al., which discloses waveguide laser.
- c. U.S. Pat. No. 5,748,663 to Chenausky, which discloses rectangular discharge gas laser.
- d. U.S. Pat. No. 6,580,732 to Guch, Jr. et al., which discloses multiple mode laser.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is (571) 272-3747. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The central official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

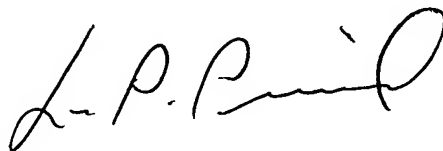
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (703)308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Carlos Ortiz-Rodriguez
Patent Examiner
Art Unit 2125



cror

May 31, 2005

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100